STATE OF MONTANA

BULLETIN

OF THE

Department of Public Health

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"The science of disease prevention, if properly applied, can add fifteen years to the present average length of human life."—Prof. Irving Fisher, Yale.

This Bulletin will be mailed monthly to any person in Montana upon request mailed to the Secretary of the State Board of Health at Helena.

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TYPHOID FEVER.

There is more typhoid fever in the State of Montana than there should be. In fact there should be none. An outbreak of typhoid fever in any community is a reflection upon the Health Department of that community, as well as upon the State Department of Health.

A large proportion of the cases of this disease is reported from the rural communities. This is no doubt due largely to the fact that the people in the rural communities are not yet cognizant of the fact that there is danger in drinking from irrigating ditches and mountain streams. There was a time in the history of Montana when the mountain streams were comparatively pure, but the State is being rapidly settled and streams which a short time ago were comparatively pure, now receive surface drainage from human habitation. No stream receiving such drainage can be pronounced safe, and as soon as the people of the State realize this, and take the proper precautions, the sooner we will have a diminished number of cases of typhoid fever. No stream in this State, on whose watershed in a near vicinity to the stream are located human habitations, should be used as a source of domestic water supply by people living on its banks further down.

Wells are often contaminated by surface drainage from barn yards and toilets.

While contaminated water is a frequent cause of typhoid fever, it is not the only cause. A typhoid carrier depositing excreta in an open toilet, the flies from which have free access to food products, are common causes of this disease. Typhoid carriers employed as cooks and dairymen have been the cause of not a few epidemics. The Health Officer in making his investigations as to the source of reported cases should not confine himself to the quality of the water used, but should consider the possibility of fly contamination and carriers.

An investigation of an outbreak of typhoid fever in a hay bailing crew on a ranch in this State is now being made. The evidence at this time points to the cook as being the cause in this case. An examination of the blood from this cook shows a positive widal, although in this case there is no history of a previous attack of typhoid fever. As soon as

the investigation is completed, it will be reported in the bulletin.

But the point we wish to emphasize to the Health Officers throughout the State, is that every case of typhoid fever reported should be carefully investigated. If the water supply is suspected, temporarily condemn it and send a specimen to the laboratory for analysis. If there are open toilets, see that they are rendered fly proof. If a possible carrier is suspected, take a sample of blood and send it to the laboratory at Helena. A typhoid carrier almost invariably gives a positive widal.

Doctors should urge typhoid vaccination. It is just as criminal to neglect advising typhoid vaccination to the healthy members of a family where typhoid exists, as it is to neglect advising prophylactic treatment for diphtheria under similar conditions.

But all of our cases of typhoid fever have not occurred in the rural districts. Some towns have furnished quite a large number of cases. There are a few towns in this State, which are furnishing to their people water of questionable purity. When the attention of these towns is called to the fact that they are probably legally, as well as morally, responsible for sickness due to a contaminated water, they may get busy. The Supreme Court of Minnesota has ruled that a person who contracts typhoid fever as a result of drinking a contaminated water furnished by a city or company, has a legal claim for damages against such city or company. This may have the effect of causing some of our cities and water companies to sit up and take notice.

OH! HELL!

Vital statistics which are not complete are useless. In fact they are worse than useless, they are misleading.

Every child born in this State has a right to have its birth recorded, but many of the babies are being cheated out of their rights in this respect. What doctor wants to have the reputation of cheating a swaddling infant?

Every dead man has a right to have his death recorded in the State Department of Vital Statistics. Yet it takes much of the time of this office jacking up careless undertakers in

order to get promptly and completely the death certificates. What undertaker wants to have the reputation of cheating the dead? It is bad enough to cheat the living relatives.

We cannot efficiently and effectively carry on health work unless we get prompt and complete reports of contagious diseases. Yet some of the doctors are woefully careless in reporting their cases.

Unless we have the complete co-operation of all concerned, we cannot do our full measure of effective work.

(We apologize for the heading of this article, but if it has been the means of getting a few of the careless doctors to read it, we readily submit to any criticism.)

THE HOMOGENIZER.

Food Inspection Decision No. 132 reads as follows:

"The Use of Homogenized Butter and Skimmed Milk in the Manufacture of Ice Cream—Investigations have shown that there has come into use in the trade an apparatus known as a "homogenizer," which has the faculty of so disrupting the globules of fat that a whole milk homogenized does not permit the separation of the cream through the ordinary gravity methods. In like manner butter or other fat and skimmed milk pass through the homogenizer, form a product from which the butter does not separate on standing and which resembles in its other physical characteristics whole milk.

Investigations have further shown that butter and skimmed milk are passed through the homogenizer to form a so-called "cream," which is used in place of real cream in the manufacture of ice cream.

The Board is of the opinion that skimmed milk and butter fat in appropriate proportions passed through the homogenizer are not entitled to the name of "milk" or the name of "cream," as the case may be, according to the quantity of fat which is present. The Board is further of the opinion that the product made from homogenized butter or skimmed milk cannot be properly called "ice cream."

At the meeting of the State Board of Health, held September the 23rd, this Decision was made a part of the regulations of the State Board of Health, with this addition:

"The Montana State Board of Health therefore holds that the sale of homogenized milk or cream or of the frozen product therefrom is illegal unless the information be furnished to the purchaser of the true character of these products, including the presence of other fats than butter fat, when present, by a system of labeling that conforms to the provisions of the Montana Food and Drug Act and the Rules and Regulations of the State Board of Health."

LABORATORY REPORT.

Summary of Samples Analyzed.

	Legal	Illegal	Unofficial	Total
Ice Cream:				
Strawberry	1	1	....	2
Vanilla	13	2	3	18
Caromel	1	....	....	1
Cream	2	4	....	6
Milk	26	10	9	45
Milk (Dairy Commission)	1	....	....	1
Hamburger Sausage	....	1	....	1
Gluten Flour	....	1	....	1
Preserving Compounds	5	1	....	6
Commercial Food Dyes	2	....	....	2
Water	....	....	....	37
Total	51	19	12	120

Thirty-seven samples of water have been examined in the chemical and bacteriological laboratories. The samples were shipped from the following cities and towns: Dover, Glendive, Great Falls, Helena, Kalispell, Lewistown, Livingston, Manhattan, Miles City, Poplar, Roy, Ryegate, Saco, Whitehall, Wibaux and Vananda.

Twenty-one samples of ice cream were examined. Of this number two were strawberry, eighteen were vanilla and one caromel. Of the total number, fifteen were legal, three illegal and three unofficial.

Six samples of cream were examined. Of this number, two were legal while four were adulterated, being either below standard in butter fat or because of an added preservative.

Forty-five samples of milk were examined. Of this number, twenty-six were legal, ten were illegal and nine were classified as unofficial.

One sample of milk was examined for the Dairy Commission. The fat content was found to be normal.

One sample of flour was examined for its gluten content. While it was an unofficial sample it was found to be misbranded.

Six samples of preserving compound were examined. Of this number five were found to be legal and one illegal.

Two commercial food dyes were examined. Both were permitted dyes.

THE SANITATION OF SWIMMING POOLS.

The question of swimming pool sanitation is of growing importance in Montana. There are at least a dozen public swimming pools at the various hot springs in the State. Recent succecssful campaigns to raise funds for Y. M. C. A. buildings in the larger cities add to the number of swimming pools. In one instance a municipal public plunge bath has been installed. The Board of Health has commenced a study of the sanitary conditions of swimming pools and will have some definite data to announce later.

That some study of the problem is called for is shown by the following comparison of analyses. The analysis tabulated below under W. 5028 is of a sample of water used to fill a certain plunge bath. The tabulation under W. 5030 shows the composition of the same water in the swimming pool after it has been used a few weeks.

	Pts. per Million.		
	No. W. 5028	No. W. 5030	
Free Ammonia	.008	.151	
Albuminoid Ammonia	.138	.151	
Nitrites	.000	.400	
Nitrates	.240	.900	
Oxygen Consumed	.55	5.7	
Chlorine	2.3	5.7	
B. Coli	None	5	per 3 c. c.
Total Bacterial Count		39520	per c. c.

The above comparison indicates that in case of the swimming pool in question more attention should be given to purifying the water by filtration and chemical disinfection. The large increase in organic matter noted and the presence of B. coli shows evidences of contamination that cannot be overlooked. The increase in chlorine content shows the necessity of more strict regulations preventing the occurrence of nuisances in the pool.

That careful sanitary regulations of the operation of swimming pools is necessary is shown by the following quotation from the Ohio Public Health Journal.

"When the use of some pools is made compulsory, as it is in some schools, the responsibilities of strict sanitary supervision is evident. Three cases of diseases are most prominent among those classed as communicable from the use of swimming pools; namely, intestinal, eye and ear, and venereal. The most important are those which affect the intestinal canal and of this class typhoid fever and diarrhoeal conditions have been traced to swimming pools such as those found installed in colleges, schools, gymnasiums, clubs, etc. Examination of the water for colon bacilli as an index of pollution is taken as a standard method of control as in the case of drinking water. Investigations of the bacteriologic laboratories at Columbia University show that the sanitary conditions in the swimming pools in New York colleges are very good, largely because of the supervision of those in charge. In one of these pools the bacteriological condition of the water closely approximated ordinary drinking water. Proper hygenic perfection is accomplished largely by proper administration of the plant. Together with this it is necessary to

have a proper source of water, frequent refilling and dilution and careful rules regarding pool sanitation. Refiltration of the pool water is both useful and economical, especially when combined with chemical disinfection of the water.

Those pools which are open to the public without admission fee or restrictions are generally attended by a good class of people, and are usually elaborately equipped and properly operated. Some authorities maintain, however, that because of the large and promiscuous attendance they are sources of infection.

Association pools which secure a higher and cleaner class of patrons and which usually charge an admission fee vary in their sanitary condition, depending upon the attendants, preliminary baths taken by the bathers and the extent of chemical disinfection.

From the above statements it is obvious that all pools and public baths should be under the supervision of competent sanitarians. It would also seem that aside from ideal construction, proper equipment and personal hygiene, refiltration and chemical disinfection are the most efficient means of keeping the water in the swimming pool in proper sanitary condition."

As an efficient method of chemical disinfection Thomas recommends the use of copper sulphate and summarizes the advantages over hypochlorite of lime as follows:

I. "It is more effective because it does not undergo chemical change readily. Hypochlorite owes its power to the chemical change and is afterwards useless.

II. "It is not irritating to the eyes and mucous membranes as is "hypochlorite" if the latter is used in germicidal quantities.

III. "It is cheaper.

IV. "It has no odor. If all other conditions were equal this last fact alone would prove its great advantage over "hypochlorite."

THE USE OF SACCHARIN IN FOODS.

By Prof. Charles H. LaWall.

Saccharin in food stuffs has only one argument in its favor, i. e., it cheapens the cost of production. This, however, is no advantage to the consumer, for when it is used in canned foods the goods are sold at no lower price at retail, with the exception of one product alone, and that is the bottled soft drinks or cheap sodas and "pops." So far as these products are concerned I think their very cheapness makes them doubly dangerous and feel sure that many cases of sickness in the poorer districts of the city are caused by this same saccharin in the soft drinks which are so freely consumed there. As authority for this opinion I would refer you to Dr. Edwin Rosnethal of 517 Pine Street, who has an extensive medical practice in the section of the city where these adulterated soft drinks are largely sold and who has upon more than one occasion expressed himself emphatically as unhesitatingly condemning them.

Saccharin is a synthetic or artificial product made from toluene, one of the fractions of coal tar. This fact alone need not necessarily be taken as an argument for its condemnation but it is quoted to show that it has no chemical relationship nor anything in common with sugar, for which it is used as a substitute. Chemically it is known by the terrifying name of orthosulphamidobenzoic anyhydrine and the history of its discovery, or rather the discovery of its intense sweetness, which was purely accidental, is one of the most interesting in chemical literature.

Saccharin, besides being a sweetener of 550 times the intensity of sugar, is a substance having a marked preservative action and thus fulfills a double function, which makes it all the more desirable to use, from the standpoint of those manufacturers who look to the profits regardless of the health of the individuals who consume their wares. As an anti-ferment or preservative it is credited with being more harmful than sodium benzoate, salicylic acid or even sulphurous acid.

When used it not only exerts a detrimental influence upon certain functions of the body but it cheats the organisms out of a valuable food product—sugar. Sugar has a high and

definite food value, saccharin has none. Therefore, the use of saccharin in food products cheats the consumer out of a valuable constituent which the system craves and to which he is justly entitled.

A number of European chemists and physiologists have investigated this subject thoroughly and have reported adversely concerning its action. Dujardin Beaumetz states: "The use of saccharin in foods presents a danger to the public health. Saccharin is not a food but a medicine." The Committee of the Seine Council expressed the same opinion. Sollman, a well-known American authority, states: "Saccharin has the properties of the coal tar group and is therefore antiseptic and irritant. It is sometimes given in fermentative dyspepsia. Its long continued use interferes with digestion and may lead to nephritis." (Kidney disease.)

Mathews and McGuigan state that "Saccharin acts as a protoplasmic poison and restrains the salivary and pancreatic ferments."

Based upon the results of the many investigations which have been made and for the purpose of controlling or prohibiting its use in food products, France, Italy, and Portugal prohibit its importation, the academies of Madrid and Rio Janerio declare its addition to foods a dangerous adulteration and its importation into Belgium has been restricted.

While it has been largely used as an artificial sweetner by diabetic patients who dare not take sugar, it is always used under the advice and control of a physician, and that they (physicians) are beginnig to question the advisability of even such a limited use is shown by the fact that in the recently publlished edition of the Physicians Manual of the United States Pharmacopoeia and National Formulary, this statement appears: "Saccharin should be used if at all with care." If physicians must be careful in using it, it certainly cannot be a safe article to permit the use of in food products.

Finally, the Referee Board, the same body which permitted the use of Sodium Benzoate in foods, in April, 1911, decided against the advisability of permitting the use of saccharin in foods. The U. S. Dept. of Agriculture therefore has issued decisions to the effect that while saccharin may be used in food especially prepared for diabetics and as a drug, it is not permissible to use in ordinary food products even when

declared upon the label. Food Inspection Decision No. 146, U. S. Department of Agriculture, June, 1912.

—Bulletin Dairy and Food Division—Pennsylvania.

COMMUNICABLE DISEASES REPORTED TO THE STATE BOARD OF HEALTH FOR THE MONTH OF AUGUST, 1915.

Smallpox—Gallatin (Excl. of Bozeman), 1; Helena, 3; Musselshell, 1; Silver Bow (Excl. of Butte), 4*; Butte, 7; Total, 16. Total last month, 35.

Diphtheria—Hill, 1; Madison, 2; Sheridan, 1; Silver Bow (Excl. of Butte), 2; Butte, 2; Stillwater, 1. Total, 9. Total last month, 9.

Scarlet Fever—Stillwater, 2; Teton, 1. Total, 3. Total last month, 18.

Typhoid Fever—Blaine, 1; Great Falls, 2; Custer, 3; Dawson, 15; Fergus, 2; Flathead (Excl. of Kalispell), 3; Kalispell, 3; Gallatin, 3; Granite, 2; Lewis and Clark (Excl. of Helena), 1; Helena, 4; Hill, 6; Mineral, 3; Park (Excl. of Livingston), 1; Richland, 2; Rosebud, 1; Sheridan, 8; Stillwater, 1; Sweet Grass, 2; Teton, 1; Yellowstone (Excl. of Billings), 2; Billings, 1; Total, 67. Total last month, 22.

Measles—Deer Lodge (Excl. of Anaconda), 1; Anaconda, 7; Powell, 1; Mineral, 1; Richland, 3; Sheridan, 2; Butte, 6; Stillwater, 1. Total, 22. Total last month, 54.

Cerebro Spinal Meningitis—Great Falls, 1. Total, 1. Total last month, 1.

Spotted (Tick) Fever—Ravalli, 1. Total, 1. Total last month, 1.

Tuberculosis—Blaine, 1; Great Falls, 1; Custer, 1; Fergus, 1; Gallatin (Excl. of Bozeman), 1; Sanders, 1; Butte, 7; Valley, 1; Billings, 2; Total, 16. Total last month, 9.

Whooping Cough—Blaine, 2; Teton, 1. Total, 3. Total last month, 9.

Anterior Polimyelitis—No cases reported. Last month, 0.

Trachoma—Custer, 1. Total, 1. Total last month, 1.

*Three of the Smallpox cases reported from Silver Bow County are city cases confined at the pest house.

BIRTHS (EXCL. OF STILLBIRTHS) REPORTED TO THE STATE BOARD OF HEALTH FOR THE MONTH OF AUGUST, 1915, AND COMPARATIVE BIRTH RATE IN THE STATE.

	Males	Females	Totals	Deaths	Excess of Births	Excess of Deaths
Beaverhead	6	8	14	9	5	..
Big Horn	3	3	6	2	4	..
Blaine	7	9	16	3	13	..
Broadwater	3	2	5	...	5	..
Carbon	19	23	42	12	30	..
Cascade Excl. of	7	6	13	6	7	..
Great Falls	31	27	58	23	35	..
Choteau	11	10	21	5	16	..
Custer	17	14	31	14	17	..
Dawson	20	19	39	5	34	..
Deer Lodge Excl. of	1	...	1	9	...	8
Anaconda	11	14	25	14	11	..
Fallon	1	1	2	5	...	3
Fergus	33	26	59	17	42	..
Flathead Excl. of	12	10	22	1	21	..
Kalispell	5	4	9	8	1	..
Gallatin Excl. of	9	8	17	4	13	..
Bozeman	8	6	14	5	9	..
Granite	2	3	5	3	2	..
Hill	20	20	40	6	34	..
Jefferson	3	5	8	2	6	..
Lewis and Clark Excl. of	12	7	19	8	11	..
Helena	6	19	25	11	14	..
Lincoln	4	4	8	...	8	..
Madison	8	3	11	3	8	..
Meagher	9	8	17	3	14	..
Mineral	3	2	5	...	5	..
Missoula Excl. of	6	6	12	6	6	..
Missoula City	16	6	22	11	11	..
Musselshell	13	17	30	2	28	..
Park Excl. of	3	3	6	2	4	..
Livingston	8	8	16	6	10	..
Phillips	2	4	6	...	6	..
Powell	6	7	13	3	10	..
Prairie	5	3	8	3	5	..
Ravalli	8	8	16	8	8	..
Richland	11	11	22	7	15	..
Rosebud	11	6	17	2	15	..
Sanders	3	1	4	2	2	..
Sheridan	19	8	27	8	19	..
Silver Bow Excl. of	13	17	30	15	15	..
Butte	37	33	70	40	30	..
Stillwater	1	4	5	...	5	..
Sweet Grass	4	7	11	5	6	..
Teton	9	12	21	9	12	..
Toole	3	4	7	2	5	..
Valley	7	7	14	3	11	..
Wibaux	1	3	4	1	3	..
Yellowstone Excl. of	8	14	22	6	16	..
Billings	19	16	35	8	27	..
Totals	484	466	950	327	634	11

Stillbirths 35

DEATHS (EXCL. OF STILLBIRTHS) REPORTED TO THE STATE BOARD OF HEALTH FOR THE MONTH OF AUGUST, 1915, ARRANGED ACCORDING TO COUNTIES AND PRINCIPAL CITIES.

	Spotted Fever	Small Pox	Tuberculosis	Diphtheria	Scarlet Fever	Measles	Typhoid Fever	Meningitis	Anterior Poliomyelitis	Whooping Cough	Pneumonia	Nephritis	Organic Heart Disease	Malignant Tumors	Acute Intestinal Diseases	Violence	Suicide	Alcoholism	All Other Causes	Totals
Beaverhead			1								3	1				4				9
Big Horn												1				1				2
Blaine			1													1			1	3
Broadwater																				
Carbon			3					1			1					3			4	12
Cascade Excl. of												1				3			2	6
Great Falls			2								3		2	1	2	1			12	23
Choteau			1									1	1		1				1	5
Custer											1				2	6			5	14
Dawson							2	1											2	5
Deer Lodge Excl. of			1																8	9
Anaconda											2	3	1			4			4	14
Fallon			1								1		1	1		1				5
Fergus			2									1	1	1		4			8	17
Flathead Excl. of												1								1
Kalispell												3	2	1				1	1	8
Gallatin Excl. of													2			1			1	4
Bozeman								1				1	1						2	5
Granite			1				1										1			3
Hill							2						1				1		2	6
Jefferson				1												1				2
Lewis and Clark Excl. of			1								2	1	2			1			1	8
Helena											1	2	2	1		1			4	11
Lincoln																				
Madison													1			1			1	3
Meagher																1	1		1	3
Mineral																				
Missoula Excl. of			1									1	1	1		1			1	6
Missoula City							1					2		1					7	11
Musselshell																			2	2
Park Excl. of																1			1	2
Livingston													1						5	6
Phillips																				
Powell												1				1			1	3
Prairie											2					1				3
Ravalli	1		1									1	1			1			3	8
Richland													2	1		3			1	7
Rosebud																1			1	2
Sanders																			2	2
Sheridan			1										1	1		2			3	8
Silver Bow Excl. of			3						1				2			5	1		3	15
Butte			12	1							2		3	1	2	1		3	15	40
Stillwater																				
Sweet Grass													2			1			2	5
Teton			2								1		2			2			2	9
Toole											1								1	2
Valley													1			1			1	3
Wibaux													1							1
Yellowstone Excl. of							1									1			4	6
Billings			1								1	1	1			2			2	8
Totals	1		35	2			7	3		2	20	21	36	10	7	58	4	4	117	327

Estimated Population	420,000
Monthly Death Rate per 1,000 Population	.802
Annual Death Rate per 1,000 Population	9.624